ABSTRACT

A switched reluctance machine system includes a stator, a rotor situated to rotate relative to the stator and a plurality of phase windings situated in the stator. A power supply is connected to the phase windings via power converter and a controller outputs control signals to the power converter to selectively apply power to the phase windings. The controller receives feedback signals from the phase windings that provide phase current information to the controller. The controller is programmed to analyze the phase current information and control the power converter to inject diagnostic pulses into any of the phase windings in which current in the phase winding is below a predetermined level. The rotor position is determined based on detected characteristics of the diagnostic pulses, and the characteristics may be weighted, for example, in response to an estimated position of the diagnostic pulses.